

## **AMENDMENTS TO THE SPECIFICATION**

### **In the Abstract of the Disclosure:**

**[0037]** The air conditioning system for conditioning of an airflow stream uses a fluid flow system to control operational modes of heating, cooling, dehumidifying, freeze protection and defrost. The fluid flow system allows an air conditioning system to operate using a hot fluid source without the need for a gas or oil direct heat air stream heat system. The fluid flow system circulates fluid through a reheat coil and a precooling coil or a bypass conduit thereof depending on the operating mode of the system. Routing of fluid flow is controlled by a hot water control valve and a bypass valve under control of a ~~controls fluid pressure and control panel and a check valve stabilizing the fluid pressure~~ minimizing formation of gas bubbles in the fluid which condition may degrade system performance.

### **In the Specifications:**

Please replace the paragraph beginning on page 1, paragraph [0003], with the following rewritten paragraph:

**[0003]** The present invention has a circulating fluid system that may use a water loop system for use with a hot water heating system that is moderated by a check valve with a lower system air pressure drop than a system with separate heating and cooling circuits such as a heat pipe system. No combustion air is required such as with a furnace or electric heat elements in the air duct system as with an air-to-air ~~heat~~ pump. The hot water supply may be kept at approximately 135 degrees to minimize formation of bacteria in the domestic hot water supply system. The system may also be operated in a whole house dehumidification mode with minimal energy consumption. By control setting of the operational sequencing of fluid flow, and air flow fan speed the latent capacity of the system is enhanced and the air conditioning system may perform properly while in low speed fan and fluid flow to save energy consumption. A further feature allows operation of the system to deliver low space humidity levels in a building.

Please replace the paragraph beginning on page 2, paragraph [0004], with the following rewritten paragraph:

**[0004]** As can be seen, there is a need for a multioperational mode air conditioning system that may use domestic hot water as a heat source and that operates efficiently to condition an air stream

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stream flow.

Please replace the paragraph beginning on page 6, paragraph [0017], with the following rewritten paragraph:

**[0017]** Under conditions of a low sensible heat ratio the air conditioning system may operate in a cooling and/or dehumidification mode. The sensor 53 activates the compressor 41 and positions the precool coil bypass valve 29 to route water through the precool coil 23. Approximately 1/2 to 45 seconds thereafter the recirculating pump 22 is activated. Approximately 1/2 to 45 seconds thereafter the fan 26 is activated to run at the dehumidification operating speed. If the sensor 53 senses the temperature is 1/2 to 2 degrees below the set point, the precool coil bypass valve 29 is positioned to route water to the bypass conduit 28 and thereby bypassing the precool coil 23, and then the hot water control valve will open. The hot water control valve 30 will then open to the hot water source 33. The airflow will then be heated by reheat coil 25 until a temperature approximately 1/2 to 2 degrees above the set point is sensed. When such temperature is sensed the hot water control valve 30 will be positioned to shut off the hot water source 33 and ~~the then~~ precool coil bypass valve 29 will be positioned to route water through precool coil 23. This cycling will repeat in order to maintain the sensed environment air in the set temperature and humidity range. When the temperature and/or humidity are in the set range the compressor 41, loop recirculating pump 22 and fan 26 will turn off in a reverse sequence from the turn on.

Please replace the paragraph beginning on page 7, paragraph [0020], with the following rewritten paragraph:

**[0020]** The check valve/buffer 31 used in the air conditioning system 1 serves to stabilize system pressure of the water flow loop conduits 20 and associated valves of the water loop system 80 to control the formation of bubbles in the water. The water loop system 80 pressure can vary due to the expansions and contractions of the water when the system exits operations of reheating, pumping, and heat cycles as well as uneven pressure may occur in combination heat, cool, dehumidification when high water use devices such as showers, hot tubs, washers and the like are operated. The high water use without proper regulator control can cause pressure fluctuations in the water loop system 80 that may cause air bubbles to form and reduce or stop the recuperative heat process of the air conditioner system 1. ~~The check valve 31 may be replaced by a scrubber/volume control and a purge combination assembly (not shown). The assembly may be located in the position of the illustrated purge valve 32.~~

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